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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,880	12/31/2003	Yuvaraj Athur Raghuvir	11884/405701	8889

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EXAMINER	
VO, TED T	
ART UNIT	**PAPER NUMBER**
2191	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/749,880	RAGHUVIR ET AL.	
	Examiner	Art Unit	
	Ted T. Vo	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment filed on 12/20/2006.

Claims are amended; Claims 1-16 are pending in the application.

Response to Arguments

2. Applicant's arguments in the remarks filed on 12/20/2006 have been fully considered.

The Applicants' argument to the rejection of Claim 1-16 under 35 USC 101 has been considered, however, the claims 11-15 remain rejected under this statutory. It should be noted that claims 11-15 recite a "program storage device". The phase "program storage device" does not limit the claim as a physical material structurally and functionally interrelated to the medium that can be accessible by a computer processor. The recitation "program storage device" is any generic device in which a program is deposited or resided. The claim remains reciting the descriptive materials because no further limitations that show the instructions in the device permitted and realized a processor. A Claim of descriptive materials that fail to be realized by a processor is a list per ser. The claim does not meet statutory claim under 35 USC 101.

The Applicants' argument to the rejection of Claim 1-16 under 35 USC 102 has been considered. Applicants amended the claims with limitation "hierarchically organized test scenario", and "nested test case class"; the amendment of these newly limitation will raise the new issue, and new ground of rejection is addressed in this action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). The arguments to the amended claims are moot in view of the new ground of rejection.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. The claims 11-15 are rejected under 35 U.S.C 101 because the claimed invention is directed to non-statutory subject matter.

As per Claims 11-15:

A claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result". State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. A device is a generic element that might not be associated with a physical execution such as the execution of a computer. Storage is a generic element that might not be associated with a computer readable medium. Reciting instructions associated with such generic elements remains reciting a program per se or listing per se. The functional elements of Claim 11 after "instruction for" are the intended purposes of the instructions. Therefore, Claims 11-15 recite merely a generic device having instructions, and thus recite a program per ser.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by Skinner, "Enhancing an Open Source UML Editor by Context-Based Constraints for Components", Technical University of Berlin, pp. 1-121, 12-2001.

As per Claim 16: Skinner discloses,

A computer system for testing a software application comprising:

a test module (all UML diagrams are implemented by at least one software module: Skinner shows the test is organized in hierarchical scenario: Figure 5.1, p. 28);

at least one nested test case class defined for each of a plurality of operations, wherein the operation is characterized as having a beginning and an end (Figure 5.1, p. 28, represents having nested test case class defined for each of a plurality of operations, where the test hierarchical structure has a beginning as root and an end as an ended object model);

a first portion for receiving first information describing valid start states and probable end states for each test case class (See p. 77, validate the XMI document..., see CrCoConInvalid, p. 112, etc);

a second portion for receiving second information for relating at least a portion of the test case classes to reflect a particular hierarchically organized scenario for testing (e.g. the implementation for UML Diagram seen in Figure 5.1 p. 28); *and*

a third portion for performing a test of the particular hierarchically organized scenario as a function of the first information and second information (e.g. the execution of a test based on the scenario as of UML diagrams in accordance to this reference).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skinner, "Enhancing an Open Source UML Editor by Context-Based Constraints for Components", Technical University of Berlin, pp. 1-121, 12-2001, in view of Elbaum, "Test Case Prioritization: A Family of Empirical Studies", IEEE, pp. 159-182, 2-2002

Given the broadest reasonable interpretation of followed claims in light of the specification.

Terms' Definition:

test scenario: A set of test cases that ensure that the business process flows are tested from end to end. They may be independent tests or a series of tests that follow each other, each dependent on the output of the previous one. The terms "test scenario" and "test case" are often used synonymously

As per Claim 1: Skinner discloses a method for testing software by using an UML editor/JUnit to build a test scenario for software testing (See Figure 5,1, p. 28). The UML editor/Junit provides the test that receives test case class with a plurality of operation such as TestA(), TestB(). Associated with the test case is Testsuite, test interface, TestRunner (Figure 5.1) (*'test scenario'*). In the test framework built under UML diagram as shown in Figure 5.1, it has the *hierarchically organized test scenario, and nested test case class* properties.

Skinner discloses, ***A computer-implemented method for testing a software application comprising:***

associating a test case class with each of a plurality of operations (p. 28, Figure 5.1, TestCase, AtestCase, Test(A), etc.);

receiving a hierarchically organized test scenario, the test scenario including at least one selected, nested test case class (The UML diagram of test framework: i.e., the diagram in Figure 5.1, or see Figure 2.2, p. 17)***;***

receiving ranking information for the test scenario (See description of Unit Testing, p. 27, and see the information, "priority" included in an XMI-element definition. Note: should relate XMI to a hieratical class diagram in Figure 5.1, i.e. when a related test is called, this information of priority is received), ***the ranking information pertaining to relative prioritization of execution of each of the selected test case classes*** (abstractly described in p. 27)***;***

performing a test of the test scenario as a function of the ranking information (Figure 5.1 in p. 28 is an example of a test case that is run using the hierarchically organized test scenario, where the test case used in this test run is performed in the manner to the priority discussion in p. 27).

The performance of a test in the Skinner reference is provided by a selection of test run such as Figure 5.1, and is based on Constraints in UML. It should be noted that Skinner defines priority of test based a top priority of fixed code, i.e. test suite of 99% tests pass is still a failure (See p. 27); there are constraints in XMI-element definition included with "priority" (p. 74), where XMI-elements is known as related to UML diagrams that is used as *hierarchically organized test scenario* as shown in Figure 5.1.

The reference Skinner discussed receiving ranking information relatively of each test case class in the execution with a generic manner (as discussed as "top priority" based on the 99% of testcase failures and "constraints" shown in the XML-elements). It does not explicitly use the language as recited in the claim, "*the ranking information pertaining to relative prioritization of execution of each of the selected test case classes*"

Elbaum establishes prioritization in testcases. Its purpose is to provide ranking information for testcases (Elbaum: sec. 3, start at p. 160), for a test scenario. The ranking information pertains to relative prioritization of execution of each of the selected test case (See p. 169-170, discussing rankings for the Experiments 1a (p.167) and 1b (p.169) so that the performance of the test is as a function ('function level') of the ranking information.

Since using UML diagrams is for conforming to an open source which is developed by OMG in model management, and since prioritization of test cases is well-known subject in testing for assisting software test engineers to improve test performance as increasing the test suite's rate of fault detection, the two elements (test scenario using UML diagrams and test case prioritization) are well-known to all skills in the arts. They use the UML diagrams for relating test model and establish the prioritization as a nature of need and availability.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the well-known "prioritization" of test cases, by Elbaum, and object management model developed by OMG and disclosed by Skinner in a hierarchically organized test scenario. Using UML is of OGM opened to public domain, and prioritization is well known and used for increasing the test suite's rate of fault detection.

As per Claim 2: Skinner further discloses *The method according to claim 1, wherein each operation includes a collaborative behavior of a plurality of classes* (See Figure 5.1).

As per Claim 3: Both Skinner and Elbaum further disclose

The method according to claim 1, wherein the ranking information is validated to be semantically correct with respect to a framework semantics. It is obvious to include because semantic validation is a part of programming, and where ranking information is as part of the code (Elbaum: p.159, introduction, see sec. 5.3, start at p. 171).

As per Claim 4: Both Skinner and Eubaum disclose *The method according to claim 3, wherein the ranking information is validated to be semantically correct by defining valid start states and probable end states for each associated operation.* It is obvious to include because semantic validation is a part of programming (Elbaum: p.159, introduction, see sec. 5.3, start at p. 171. Skinner: p. 17, p. 18).

As per Claim 5: Both Skinner and Elbaum disclose *The method according to claim 3, wherein the ranking information is validated to be semantically correct with respect to a framework semantics by providing an editor that allows only valid nesting of test cases* (Elbaum: p.159, introduction, see sec. 5.3, start at p. 171. Skinner: p. 17, p. 18, especially, the UML diagrams is associated with an editor (Figure 7.2, p. 43)). It obvious to include because it is known that UML diagram is a nested structure, and it should be noted that validation is part of programming language.

As per Claims 6-10: The Claims recite a computer system that has the claimed limitations corresponding to the limitations recited in Claims 1-5: See the rationale addressed in the rejection of claims 1-5 above.

As per Claims 11-15: The Claims recite a program storage device that has the claimed limitations corresponding to the limitations recited in Claims 1-5: See the rationale addressed in the rejection of claims 1-5 above.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

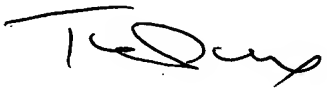
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (571) 272-3706. The examiner can normally be reached on 8:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y. Zhen can be reached on (571) 272-3708.

The facsimile number for the organization where this application or proceeding is assigned is the Central Facsimile number **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTV
April 13, 2007



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